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TRANSMITTAL OF APPEAL BRIEF			Docket No. 64098-0844
In re Application of: Alfred Eckert			
Application No. 09/701,910	Filing Date May 31, 1999	Examiner M. Graham	Group Art Unit 3683
Invention: Method & Device for Actuating a Brake System for Automotive Vehicles			

TO THE COMMISSIONER OF PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed: September 26, 2002

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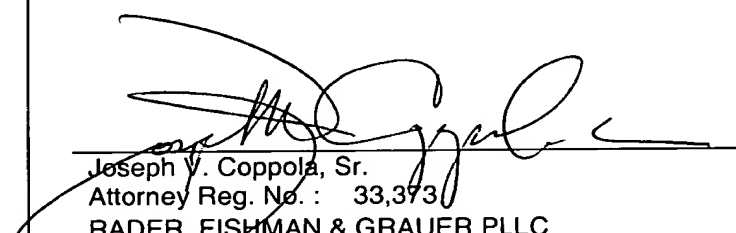
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Appeal Brief Transmittal

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(Leslie Wang)

Docket No.: 64098-0844
(PATENT)

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Alfred Eckert

Application No.: 09/701,910

Group Art Unit: 3683

Filed: May 31, 1999

Examiner: M. Graham

For: Method & Device for Actuating a Brake System
for Automotive Vehicles

APPELLANT'S BRIEF

Attention: Board of Patent Appeals and Interferences
Commissioner for Patents
Washington, DC 20231

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Dear Sir:

This brief is in furtherance of the Notice of Appeal, filed in this case on September 26, 2002.

The fees required under § 1.17(f) and any required petition for extension of time for filing this brief and fees therefor, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief is transmitted in triplicate.

This brief contains items under the following headings as required by 37 C.F.R. § 1.192 and M.P.E.P. § 1206:

- I. Real Party In Interest
- II. Related Appeals and Interferences
- III. Status of Claims
- IV. Status of Amendments
- V. Summary of Invention
- VI. Issues
- VII. Grouping of Claims
- VIII. Arguments

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IX. Claims Involved in the Appeal
Appendix A Claims Involved in the Appeal

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is Continental Teves AG & Co. OHG of Guerickestrasse 7, D-60488 Frankfurt, Federal Republic of Germany. A properly executed Assignment by the sole inventor to Continental Teves AG & Co. OHG has been recorded by the U.S. Patent and Trademark Office at reel 011573, frame 0565.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 11 claims pending in application.

B. Current Status of Claims

1. Claims canceled: 1-11
2. Claims withdrawn from consideration but not canceled: None
3. Claims pending: 12-22
4. Claims allowed: None
5. Claims rejected: 12-22

C. Claims On Appeal

The claims on appeal are claims 12-22

IV. STATUS OF AMENDMENTS

The United States Patent Office mailed the first Office Action on the merits on November 9, 2001 (paper no. 8), wherein the Examiner rejected all pending claims 12-22. Claims 12-22 were rejected under 35 U.S.C. §112, first paragraph, because the claim phrase “damping means” was asserted to be non-enabling. Further, claims 12-15, 20 and 22 were rejected under 35 U.S.C. §112, second paragraph, because the claim phrase “a control unit damping effect or the counterforce of a brake pedal” was asserted as being indefinite. Moreover, claims 12-22 were rejected under 35 U.S.C. §102(b) as being anticipate by Michels and under 35 U.S.C. §102(e) as being anticipated by Feigel, et al.

Appellant responded on January 4, 2002, by filing an amendment (paper no. 9) that amended claims 12-22. Additionally, Appellant submitted arguments distinguishing the invention defined by the pending claims from that taught by Michels and Feigel, et al.

A second Office Action (paper no. 10), made final, was mailed on April 26, 2002. In this Office Action, the Examiner again rejected claims 12-22 under 35 U.S.C. §112, first paragraph, because the claim phrase “damping means” was asserted to be non-enabling. Further, claims 12-22 were again rejected under 35 U.S.C. §102(e) as being anticipated by Feigel, et al.

Appellant’s representative conducted an interview with the Examiner on June 25, 2002. During the interview, Appellant’s representative was advised to recite the phrase “brake assist function” in the body of the claims. At the time, Appellant’s representative believed the Examiner wanted Appellant to ensure that the phrase “brake assist function” was included in the body of each independent claim, not just the preamble.

Appellant responded by filing a Response After Final Rejection on June 26, 2002. Appellants addressed the rejection under 35 U.S.C. §112 and submitted arguments distinguishing the invention defined by the pending claims from that taught by Feigel, et al.

Appellant received an Examiner Interview Summary Record (paper no. 11) after filing the Amendment of June 26, 2002, which summarized the Examiner’s recommendations in the interview of June 25, 2002. The Examiner indicated in the Examiner Interview Summary

Record that "Applicant's representative was advised to add recitation regarding the brake assist function in the body of the claim."

The Examiner responded to the Response After Final Rejection in an Advisory Action mailed July 29, 2002. In the Advisory Action, the Examiner merely indicated that the pending claims "do not incorporate the agreed upon changes from the interview of 6/25/02."

A subsequent interview with the Examiner was held on August 28, 2002.

In response to the Advisory Action mailed September 29, 2002 and the subsequent Examiner interview, Appellant filed a Supplemental Amendment After Final on August 29, 2002. Appellant amended claims 12 and 19-22 to add additional recitation to the phrase "brake assist function" in the body of the claims, as requested by the Examiner.

The Examiner responded to the Supplemental Amendment After Final Rejection in a second Advisory Action mailed September 20, 2002 (paper no. 15). In the second Advisory Action, the Examiner indicated with respect to the amended claims that "the added recitation fails to define any brake assist function."

A copy of the claims involved in the present appeal is attached hereto as Appendix A. The claims in Appendix A include the amendments as filed by Applicant on January 4, 2002, but do not include the amendments as filed on August 29, 2002.

V. SUMMARY OF INVENTION

Active brake force boosters are used in vehicle brake systems to shorten the stopping distance of the vehicle. Under certain conditions, brake force boosters may be actuated by so-called "brake assist systems," which improve the braking power of a vehicle driven by a less experienced driver to shorten the stopping distance of the vehicle in emergencies. A brake assist system typically includes a brake pedal travel sensor that measures the speed of depression of a brake pedal. When a driver hesitates after the spontaneous application of the brake pedal and does not dare to fully depress the pedal, the brake assist system will intervene. Typically, an electronic control device calculates from the speed by which the braking operation was initiated by the driver whether emergency braking prevails and sends a command to the booster to deliver

the full boosting force. The result is that the vehicle is braked in a boosted manner. The above-described exemplar system and brake assist function are described in German patent DE 42 08 496 C1.

The described prior art brake assist system suffers from the disadvantage that an inadvertent quick application of the brake pedal may trigger independent activation of the brake system to augment the brake force. This may occur even when the driver applies only a small amount of force to the brake pedal after a relatively quick application thereof.

To overcome this limitation, the present invention provides a device and method for actuating a vehicle brake system to perform a brake assist function, which safely and comfortably shortens the stopping distance of the vehicle. Specifically, a vehicle brake pedal operating parameter indicative of the driver's input (such as brake pedal travel) is used by a control system to determine the required vehicle deceleration (via braking) to be effected by the brake system. In an embodiment of the present invention, the damping and/or counterforce against the brake pedal can be reduced by the control unit when the brake assist function is activated. The resulting actuating travel of the brake pedal, indicative of the driver's input, is determined by a brake pedal sensor and is then used by the control unit to determine the vehicle deceleration to be effected by the brake system. Because the damping effect and/or the counterforce against the brake pedal is reduced, the driver will depress the brake pedal further so that the deceleration effected by the brake system is augmented, without the control unit acting independently of the driver.

In another embodiment of the present invention, the control system changes the brake force acting in the brake system when the brake assist function is activated in dependence on an operating parameter of the brake pedal, such as the actuating travel of the brake pedal, the actuating speed of the brake pedal and acceleration of actuation of the brake pedal. The brake force acting in the brake system corresponds to a ratio between the determined operating parameter and the deceleration to be effected by the brake system. In this embodiment, the counterforce and/or damping effect against the brake pedal does not change. Instead, the driver's input via the brake pedal is boosted so that a shortened stopping distance can be achieved when the brake assist function is activated.

VI. ISSUES

In the advisory action dated September 20, 2002, the Examiner rejected claims 12-22, the claims on appeal, because the recitation added to the claims in the Supplemental Amendment After Final dated August 29, 2002 “fails to define any brake assist functions.” Thus, the issues presented on appeal are: (1) whether Examiner is required to designate the statutory basis for requiring Appellant to further define the phrase “brake assist function” and (2) whether Appellant is required to further define the term “brake assist function” in the claims.

VII. GROUPING OF CLAIMS

For purposes of this appeal brief only, and without conceding the teachings of any prior art reference, claims 12-22 stand or fall together as a group.

VIII. ARGUMENT

- A. The Examiner is required to designate the statutory basis for requiring Appellant to further define the phrase “brake assist function.”

Where a claim is refused for any reason relating to the merits thereof it should be “rejected” and the ground of rejection fully and clearly stated, and the word “reject” must be used. The examiner should designate the *statutory basis* for any ground of rejection by express reference to a section of 35 U.S.C. in the opening sentence of each ground of rejection. If the claim is rejected as broader than the enabling disclosure, the reason for so holding should be given; if rejected as indefinite the examiner should point out wherein the indefiniteness resides; or if rejected as incomplete, the element or elements lacking should be specified, or the applicant be otherwise advised as to what the claim requires to render it complete. MPEP § 707.07(d).

The Office Actions mailed November 9, 2001 and April 26, 2002 fully and clearly stated the grounds for rejecting the claims and designated the statutory basis for the grounds of rejection by express reference to 35 U.S.C. §§112 and 102. However, the Office Actions failed to specifically reject the claims under a designated statutory provision with respect to the phrase “brake assist function,” or otherwise express the Examiner’s issue with the subject phrase. It was not until the Examiner Interview conducted after receipt of the final Office Action did Appellant first receive any notice of the Examiner’s issue with the phrase “brake assist function,”

and even then it was unclear what the Examiner required. Moreover, even the Examiner Interview Summary Record (paper no. 11) and subsequent advisory actions failed to designate the statutory basis for any ground of rejection or otherwise clarify the Examiner's requirement that Appellant further define the phrase "brake assist function."

- B. Appellant is not required to further define the phrase "brake assist function" in the claims because the claims define the patentable subject matter with a reasonable degree of particularity and distinctness.

MPEP § 2173.02, states that the examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C. 112, second paragraph, is whether the claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available. When the examiner is satisfied that patentable subject matter is disclosed, and it is apparent to the examiner that the claims are directed to such patentable subject matter, he or she should allow claims which define the patentable subject matter with a reasonable degree of particularity and distinctness. Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire. Examiners are encouraged to suggest claim language to applicants to improve the clarity or precision of the language used, but should not reject claims or insist on their own preferences if other modes of expression selected by applicants satisfy the statutory requirement.

The essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of:

(A) The content of the particular application disclosure;

(B) The teachings of the prior art; and

(C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

In reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second

paragraph. See, e.g., *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000). See also *In re Larsen*, No. 01-1092 (Fed. Cir. May 9, 2001) (unpublished)

1. The content of Appellant's disclosure clearly defines the phrase "brake assist function" with a reasonable degree of clarity and particularity

The "Background of the Invention" section of Appellant's patent application, the contents of which are summarized above in section V of this appeal brief, clearly defines a function of a brake assist system. More particularly, as stated in Appellant's application:

"When a driver hesitates after the spontaneous application of the brake pedal and does not dare to fully depress the pedal until response of the control of an anti-lock system (ABS), the brake assist system will intervene. An electronic control device calculates from the speed by which the braking operation was initiated by the driver whether emergency braking prevails and sends, by way of a magnetic valve, a command to the booster operating in the ON/OFF mode to deliver the full boosting force. The result is that the vehicle is braked in a boosted manner." Page 1, ¶ 2 of Applicant's Specification.

Furthermore, the phrase "brake assist function" is used throughout the "Detailed Description of the Preferred Embodiments" section of Appellant's specification to generally define the brake assist system's augmentation of the brake force acting in the brake system. For example, when "the brake assist function is activated, the brake force acting in the system is augmented...." See page 7, ¶ 3 of Appellant's Specification.

2. The teachings of the prior art support this definition

As referenced in the "Background of the Invention" section of Appellant's patent application, the use of the phrase "brake assist function" to generally define a brake assist system's augmentation of the brake force acting in the brake system during certain vehicle operating conditions, is supported by German patent DE 42 08 496 C1, which corresponds to U.S. Patent No. 5,350,225. See Page 1, ¶ 2 of Applicant's Specification.

3. Appellant's use of the subject claim phrase is consistent with the interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

U.S. Patent No. 5,350,225 ("the '225 patent), which claims priority from German patent DE 42 08 496 C1, recites "FIGS. 2a to 2c are detailed cross-sectional views illustrating the *function* of the vacuum brake power assist unit of the braking system in accordance with FIG. 1." U.S. Patent No. 5,350,225, col. 7, lines 21-24. The term "function" is clearly used in the above recitation from the '225 patent to describe the manner in which the brake power assist unit augments the brake force acting in the brake system during certain vehicle operating conditions. Thus, Appellants use of the phrase "brake assist function" is consistent with the interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

Accordingly, because Appellant's claims meet the threshold requirements of clarity and precision required by 35 U.S.C. §112, second paragraph, Appellant should not be required to amend the claims to further define the phrase "brake assist function" as requested by the Examiner. For all the above reasons, Appellant submits that claims 12-22 are allowable and respectfully request that the application be allowed to pass to issue.

VIII. CLAIMS INVOLVED IN THE APPEAL

A copy of the claims involved in the present appeal is attached hereto as Appendix A. As indicated above, the claims in Appendix A do include the amendments filed by Applicant on January 4, 2002, but do not include the amendments filed on August 29, 2002.

Dated: November 26, 2002

Respectfully submitted,

By 

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APPENDIX A

Claims Involved in the Appeal of Application Serial No. 09/701,910

12. A device for actuating a brake system to accomplish a brake assist function, comprising:

a control unit for reducing at least one of a damping effect and a counterforce on a brake pedal when the brake assist function is activated,

a sensor for sensing brake pedal actuation, and

wherein the sensed brake pedal actuation is used by the control unit to determine the vehicle deceleration that is to be effected by the brake system.

13. The device as claimed in claim 12, wherein the counterforce is a function of at least one of brake pedal travel, the speed of brake pedal actuation and the acceleration of brake pedal actuation, and wherein the counterforce is reduced when at least one of the brake pedal travel, the speed of brake pedal actuation and the acceleration of brake pedal actuation exceeds a threshold value.

14. The device as claimed in claim 12, wherein the counterforce is responsive to pedal travel and rises with an increasing actuating travel.

15. The device as claimed in claim 12, wherein the damping effect depends on at least one of brake pedal travel, the speed of brake pedal actuation and the acceleration of brake pedal actuation, and wherein the damping effect is reduced when at least one of the sensed brake pedal travel, the speed of brake pedal actuation and the acceleration of brake pedal actuation exceeds a threshold value.

16. A device for actuating a brake system to accomplish a brake assist function, comprising:

a control unit for changing a brake force acting in the system as a function of at least one of an actuating travel of a brake pedal as sensed by a brake pedal sensor, an actuating speed of the brake pedal and an acceleration of actuation of the brake pedal when the brake assist function is activated, and wherein the brake force acting in the system corresponds to a ratio between at least one of the determined actuating travel, the actuation speed and the acceleration of actuation of the brake pedal, and a vehicle deceleration to be effected by the brake system.

17. The device as claimed in claim 16, wherein the brake force acting in the system is augmented with a rising actuating travel, a rising actuating speed, or a rising acceleration of actuation.

18. The device as claimed in claim 16, wherein the brake force acting in the system is reduced continuously to a normal brake force when the actuating travel decreases.

19. A device for actuating a vehicle brake system to accomplish a brake assist function, comprising:

a control unit for reducing at least one of a damping effect and a counterforce on a brake pedal when the brake assist function is activated,

a sensor for detecting brake pedal actuation, wherein the control unit is coupled to the sensor for determining the vehicle deceleration to be effected by the brake system, and wherein the control unit changes a brake force acting in the brake system depending on at least one of an actuating travel, an actuating speed and an acceleration of actuation of the brake pedal when the brake assist function is activated, the brake force acting in the system corresponding to a ratio between at least one of the actuating travel, the actuating speed and the acceleration of actuation of the brake pedal, and the deceleration to be effected by the brake system.

20. A method for actuating a vehicle brake system to accomplish a brake assist function, comprising the steps of:

reducing at least one of a damping effect and a counterforce on a brake pedal when the brake assist function is activated, and

determining the vehicle deceleration which is to be effected by the brake system as a function of brake pedal actuation.

21. A method for actuating a vehicle brake system to accomplish a brake assist function, comprising the steps of:

changing a brake force acting in the system as a function of at least one of :

- i. an actuating travel of a brake pedal,
- ii. an actuating speed of the brake pedal and,
- iii. an acceleration of actuation of the brake pedal when the brake assist

function is activated, and

wherein the brake force acting in the system corresponds to a ratio between at least one of the actuating travel, the actuating speed and the acceleration of actuation of the brake pedal, and a vehicle deceleration to be effected by the brake system.

22. A method for actuating a vehicle brake system to accomplish a brake assist function, comprising the steps of:

reducing at least one of a damping effect and a counterforce on a brake pedal when the brake assist function is activated,

determining the vehicle deceleration that is to be effected by the brake system as a function of brake pedal actuation, and

changing a brake force acting in the system depending on at least one of actuating travel, actuating speed and acceleration of actuation of the brake pedal when the brake assist function is activated, wherein the brake force acting in the system corresponds to a ratio between at least one of the actuating travel, the actuating speed and the acceleration of actuation of the brake pedal, and a vehicle deceleration to be effected by the brake system.